

First Report of *Acanthopotamon fungosum* (Alcock, 1909) (Decapoda: Potamidae) from Zeilad Wild Life Sanctuary, Manipur

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ABSTRACT: Freshwater crabs are considered as a valuable source of protein food in rural livelihood in northeast India. Although there is only little taxonomical work has been done for the freshwater crabs in the said area. The species *Acanthopotamon fungosum* (Alcock, 1909) has been reported for the first time from Zeilad Wild Life Sanctuary, Manipur on the basis of one specimen collected. Morphometric features of the examples were studied and photographs of the specimens including of that of the male gonopod structure are presented along with a brief note on the diagnostic features of the species. This discovery will be useful in respect of biodiversity as well as other further biological studies.

Keywords: Zeilad Wild Life Santuary, Manipur, first record, *Acanthopotamon fungosum*.

INTRODUCTION

The family Potamidae is a diverse group of freshwater crabs of which 38 species have been already described from the various states of North East India (Ray *et al.*, 2018); Mitra *et al.*, 2021) *Acanthopotamon fungosum* (Alcock, 1909) has been earlier recorded in North East India from only two states, Assam and Mizoram (Mitra, 2017). *Acanthopotamon fungosum* (Alcock, 1909) are distinguished and well characterized by the presence of short, dirty, spongy fur on the body. There are no reports or taxonomic studies in relation to this species from the region of Manipur till now. though earlier detailed works had been conducted by Ghosh & Ghatak

(1999) who had reported a total of 8 species under 7 genera crabs from the state of Manipur (Mitra *et al.*, 2020).

The present study reports the new record of this particular species which were collected from, Agaki stream, Zeilad Wild Life Sanctuary, Dikiurum, Tamenglong District Manipur. Though the species has been stated as to be data deficient (Cumberlidge, 2008) as per the IUCN Red data list, further more expeditions have to be undertaken to the possible habitats so as to ensure that a healthy population of this species thrives in the region for future studies. Images of the collected specimens and of the male gonopod are provided.



Fig. 1. Map showing collection site of *Acanthopotamon fungosum* in Manipur.

MATERIALS AND METHODS

Only one examples were collected from, Agaki stream, Zeilad Wild Life Sanctuary, Dikiurum, Tamenglong District, Manipur. The specimens had been collected by hand. All the identified specimens are deposited in the National Zoological collections of Zoological Survey of India, Fire Proof Spirit Building, Crustacea section, India. The identification were done by examining their morphological and male gonopod structures following Alcock (1909, 1910); Kemp (1923); Bott (1970); Yeo *et al.* (2007). In the laboratory, all the morphological measurements were

thoroughly taken involving the carapace length, carapace width and carapace height, all the measurements procedures were followed as Ng & Tay (2001); Yeo *et al.* (2007). The abbreviation CL, CW and CH represents Carapace Length, Carapace Width and Carapace Height respectively.

Materials Examined. Only one male specimen examined (Collector: Kosygin Singh & party) (Registration Number: ZSI C8562/2) India: Manipur, Agaki stream, Zeilad Wild Life Sanctuary, Dikiurum, Tamenglong District, 25°12'29"N, 93°36'46"E, Size: Male CW-19.09, CL-16.11, CH-9.88, FW-6.12.

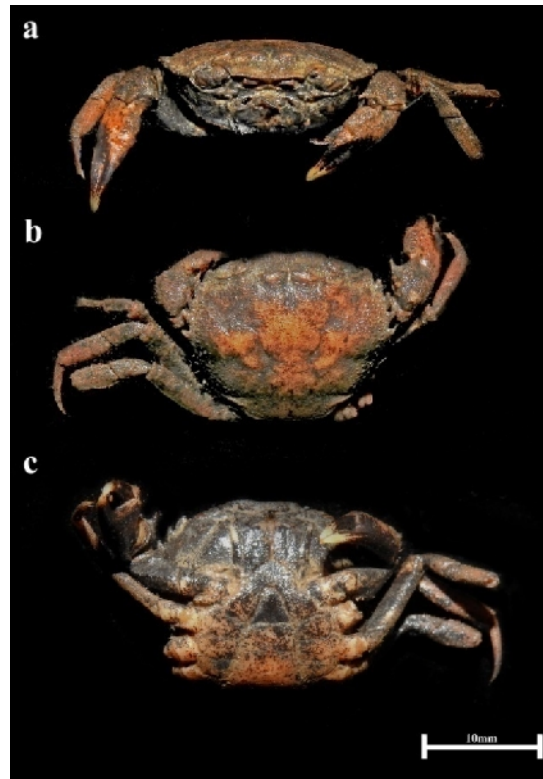


Fig. 1. *Acanthopotamon fungosum* (Alcock, 1909) ZSI C8562/2, CW-19.09, CL-16.11, CH-9.88, FW-6.12, India: Manipur, A. frontal; B. Dorsal; C. Ventral views.

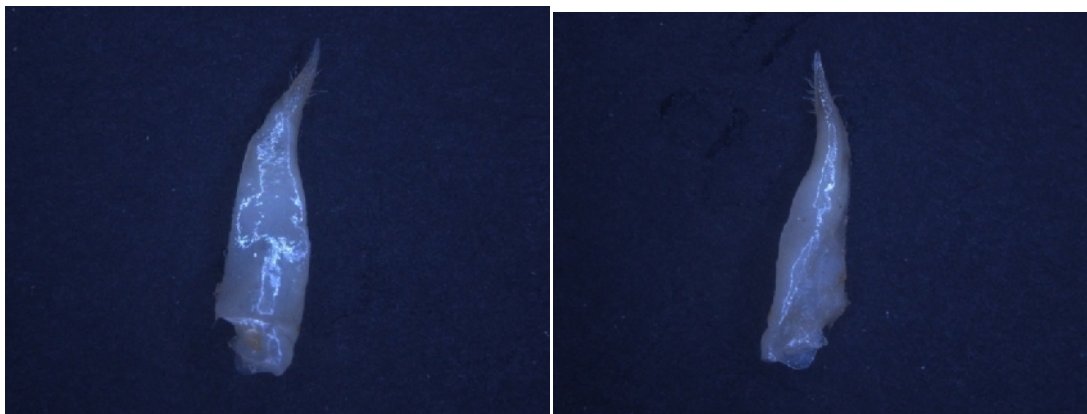


Fig. 3. A - Dorsal view of G1 – male first gonopod, B - Ventral view of G1 – male first gonopod. *Acanthopotamon fungosum* (Alcock, 1909).

Systematic Account

Phylum: ARTHROPODA Latreille, 1829
Subphylum: CRUSTACEA Brünnich, 1772
Class: MALACOSTRACA Latreille, 1802
Order: DECAPODA Latreille, 1802
Suborder: PLEOCYEMATA Burkenroad, 1963
Infraorder: BRACHYURA Linnaeus, 1758
Superfamily: GECARCINUCOIDEA Rathbun, 1904
Family: POTAMIDAE Ortmann, 1896

Acanthopotamon fungosum (Alcock, 1909)

- 1909a. *Potamon (Paratelpusa) fungosum* Alcock, *Rec. Indian Mus.*, **3**(3): 250.
1910. *Potamon Acanthopotamon fungosum*: Alcock, *Cat. Indian Decapod Crust. Indian Mus.*, **1**(2): 65, fig. 12.
1970. *Lobothelphusa fungosa*: Bott, *Abhandl. Sencken. Naturfors. Ges.*, **526**: 148, pl. 38, fig. 25; pl. 46, fig. 23.
2005. *Paratelpusa fungosum*: Brandis and Sharma, *Senckenbergianabiologica*, **85**(1): 14.
2007. *Acanthopotamon fungosum*: Yeo and Ng, *Raffles Bull. Zool.*, Supplement, **16**: 274-275.

DIAGNOSIS: Carapace slightly convex, nearly as long as broad, surface is grooved and uneven in appearance, the body is distinctively covered with short, dirty, spongy fur; antero-lateral borders of the carapace is about as long as the postero-lateral, distinctively cut into four broad salient spines, exclusive of the outer orbital tooth, tooth are slender and thorn like; postero-lateral border defined by sharp granular ridge: epigastric crest broad and blunt, much separated from and in advance of the post-orbital crests; sharp transverse tubercles are observed on the post-orbital crests. In the male abdomen the 6th segment is twice as broad as long, 7th segment is a broad based, blunt triangle shape which is nearly as long as broad. Penultimate part of G-1 (male first Gonopod) bent outward, terminal part being cylindrical, slender, bearing dense short setae.

DISCUSSIONS

Acanthopotamon fungosum (Alcock, 190) in their appearance looks similar to another crab species under the same family, *Lobothelphusa woodmasoni* (Rathbun, 1905) which has been earlier reported from the state of Meghalaya (Mitra, 2017). However on close examination a number of morphological differences can be observed between these two species, namely the carapace is seen to be covered with short, dirty spongy fur in the case of former while the same characteristics are seen missing in the latter., the carapace is observed to be as long as broad among the *Acanthopotamon fungosum* (Alcock, 1909) specimens, however in contrast it is more broader than long in *Lobothelphusa woodmasoni* (Rathbun, 1905), other significant differences can be seen in the structure of the gonopod as in the case of *Acanthopotamon fungosum* (Alcock,

1909) the terminal part is slender and cylindrical with the occurrence of dense short setae bearing a blunt tip which differs in comparison to the gonopod structure being curved outwardly at the terminal part, the terminal part being laterally compressed and more of triangular shaped in the case of *Lobothelphusa woodmasoni* (Rathbun, 1905).

They are omnivorous and are primarily detritus feeders feeding on a variety of diet which includes insects, molluscs, dead vegetation and dead remains of other living organisms including crabs. This species prefer shallow water bodies as is the case seen in streams with low depths, brooks, ponds and narrow canals, so there are greater possibilities of collecting some of these examples from such locations rather than from bigger water bodies like lakes, rivers having great depths. During the dry and hot seasons they are known to construct burrows in the soil which they seal with materials like mud. The trapped air inside these burrows in turn provides the crabs with the much needed moisture in order to survive until the favourable conditions arrive during the wet season. The burrows have been observed to be constructed in close proximities to the water bodies.

Kemp (1918) had separated the Asiatic forms of freshwater crab groups which consisted of teeth or spine like projections on the anterolateral border of the carapace and as such named *Acanthopotamon* as to be a sub-generic name for the group, from the sub genus *Acanthotelpusa*, erected by Alcock (1909) as a whole of African and Asian species. Yeo *et al.* (2007) had rearranged the genus and included *Potamon (Acanthotelpusa) fungosum* Alcock (1909) which was reassigned as to be *Lobothelphusa fungosa* by Bott (1970) for having the distinct 4 anterolateral teeth on carapace. Yeo & Ng (*op.cit.*) transferred *Lobothelphusa fungosa* in to the genus – *Acanthopotamon*, and proposed to give detail reason in their further publication.

The present report is the first to describe the presence of *Acanthopotamon fungosum* (Alcock, 1909) as a new record from the state of Manipur.

CONCLUSION AND FUTURE SCOPE

Record of the fresh water crab *Acanthopotamon fungosum* (Alcock, 1909) from Manipur suggests the distribution range is not so restricted as previously thought (Mitra, 2017). A through survey in the northeast region must be needed for exploration of this group. As these taxonomical data will be served as a base line for parasitological, fishery, ethno-medicine and other further studies.

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Conflict of Interest. None.

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